



# Chicago Pneumatic



**Filters & Elements**

**People. Passion. Performance**



# Air Quality Solutions

## How clean is your compressed air?

Atmospheric air naturally contains several impurities such as dust, various forms of hydrocarbons and water in the form of humidity. Once drawn into the compressor, these are compressed and delivered down the line along with oil particles.

These polluting agents interact with each other and can generate abrasive and corrosive emulsions that can cause wear and corrosion in the downstream equipment.

Chicago Pneumatic air quality solutions remove these contaminations from the compressed air.

## Filters keep your air distribution network in optimal shape!

In any compressed air net distribution it is a must to install one or more filters. As a result, an improved air quality is achieved which benefits your complete compressed air network, including the downstream dryers, air pipes and pneumatic tools. It is recommended to filter your air in different stages by using two or three filters.

Using only a single filter could result in saturation of the filter and cause you to lose air pressure, suffer reduced air quality or end up prematurely replacing your elements.

## User Benefits

### Boost quality and productivity

- Purify the compressed air by eliminating oil/dust contaminants
- High final product quality
- Increase your overall productivity

### Save costs

- Prolong the life span of your operation process
- Reduce potential downtime
- Annual service intervals to ensure optimal operations

### Easy operation and installation

- Compatible with any compressor technology
- Can be installed quickly and into an existing network
- Optional pressure drop device (indicator/gauge) to advise on the cartridge replacement
- Cartridge replacement done in no time
- No electrical supply needed

## Risks Avoided

### Impurities in the compressed air can cause:

- Damage to the distribution lines increasing the leakage risk
- A considerable increase in maintenance costs
- A reduction in the efficiency and life span of the pneumatic devices
- Deterioration of the final product quality
- Limitations to the reliability of the production process and all its components
- Decrease of the overall profitability

## Full Filter Range

Allowing unclean or contaminated compressed air to enter your air network holds several risks. In almost all applications, this can cause a considerable decrease in performance as well as an increase in maintenance costs both related to actual repairs as well as a loss in productivity. Chicago Pneumatic's innovative filters are engineered to cost-effectively provide the best air quality and meet today's ever increasing quality demands. They are fully developed and tested according to ISO standards.

### Components

**1** Double O-rings guarantee proper sealing to reduce leakage risks and increase energy savings.

**2** Increased user friendliness and reliability via push-on element.

**3** Protection paper avoids direct contact between filter media and stainless steel filter core.

**4** Enhanced glass fiber media ensure high filter efficiency, low pressure drop, and guaranteed lifetime performance. For oil coalescence filters, multiple layers are wrapped around each other to avoid the risk of early oil breakthrough.

**5** Enhanced high-performance stainless steel filter cores ensure ultimate strength and low risk of implosion.

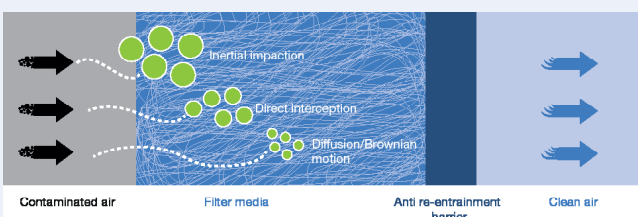
**6** Oil coalescence filters: double drainage layer (outer protection paper and foam) has a large drainage capacity which is ideal for variable speed compressors. Moreover, the polyurethane foam avoids oil re-entrainment. Dust filters: open foam acts as a pre-filter for the largest dust particles, which prolongs the filter lifetime.

**7** Epoxy sealed caps for reliable filtration.

**8** Internal ribs support the element and facilitate the route of oil droplets.

**9** Reliable and efficient, as standard, automatic float drain. Quick coupling connection for optional "No Air Loss" drain.

For optimal filtration, filters apply a triple filtration function: inertial impaction, direct interception, and diffusion.





## Innovative design concept

1. Enjoy a reduced pressure drop and increased savings thanks to the unique head design.
2. A venting hole will give an audible alarm if the filter is dismantled under pressure.
3. Removing the filter bowl is an easy job as the external ribs allow for a firm grip on the filter.
4. No need to worry about corrosion. The die cast aluminum housing with special anodized treatment protects our filters both on the inside and out.
5. Easy monitoring via sight glass.
6. Smooth draining of the filter ensures a reliable performance. This is guaranteed by our high performance automatic drain (G - C - P) and manual drain (V - S - D).



## Options



- Pressure gauge
- Dry contact mounted on the differential pressure gauge to give remote indication of the cartridge replacement



- Pressure indicator
- Serial Connection Kit allows easy mounting on filters in series
- Wall mounting kit to simplify the installation



- Quick coupling for easy connection to fix an intelligent drain with no loss of compressed air

## Choosing filtration depends on type of contamination

Today, the equipment is more sophisticated which requires the compressed air to be free of any impurities. Atmospheric air contains in its origin many impurities which once compressed (and combined with the oil, in the case of oil-injected compressors) may generate abrasive and corrosive emulsions which can damage the distribution lines, the pneumatic devices, and the product itself.

There are six different types of filters to purify the compressed air. Thanks to filters, productivity, quality and reliability are increased, the wear of the distribution network is limited and breakdowns are prevented instead of cured.

Purity Class	Solid particles			Water		Total Oil*
	Number of particles per m³			Pressure dewpoint		Concentration
	0.1 - 0.5 µm	0.5 -1.0 µm	1.0 - 5.0 µm	°C	°F	mg/m³
0	As specified by the equipment user or supplier and more stringent than Class 1.					
1	≤ 20,000	≤ 400	≤ 40	≤ -70	≤ -94	≤ 0.01
2	≤ 400,000	≤ 6,000	≤ 100	≤ -40	≤ -40	≤0.1
3	-	≤ 90,000	≤ 1000	≤ -20	≤ -4	≤ 1
4	-	-	≤ 10,000	≤ 3	≤ 37.4	≤ 5
5	-	-	≤ 100,000	≤ 7	≤ 44.6	-
6	≤ 5			≤ 10	≤ 50	-

\* Liquid, aerosol, and vapor

## Filter Range Overview



### G FILTER RANGE

Coalescing filters for general purpose protection, removing solid particles, liquid water and oil aerosol.  
Total Mass Efficiency: 99 %  
For optimum filtration, a G filter should be preceded by a water separator.



### S FILTER RANGE

Particulate filters for dust protection.  
Count Efficiency: 99,81 % at Most Penetrating Particle Size.  
(MPPS = 0,1 micron)  
An S filter should be preceded by a dryer at all times.



### C FILTER RANGE

High-efficiency coalescing filters, removing solid particles, liquid water and oil aerosol.  
Total Mass Efficiency: 99,9 %  
For optimum filtration, a C filter should be preceded by a G filter at all times.



### D FILTER RANGE

High-efficiency particulate filters for dust protection. Count Efficiency: 99,97 % at Most Penetrating Particle Size.  
(MPPS = 0,06 micron)  
A D filter should be preceded by an S filter at all times and is commonly fitted after an adsorption dryer.



### V FILTER RANGE

Activated carbon filter for removal of oil vapor and hydrocarbon odors with a maximum remaining oil content of 0,003 mg/m<sup>3</sup> (0,003 ppm).  
1000 hour lifetime

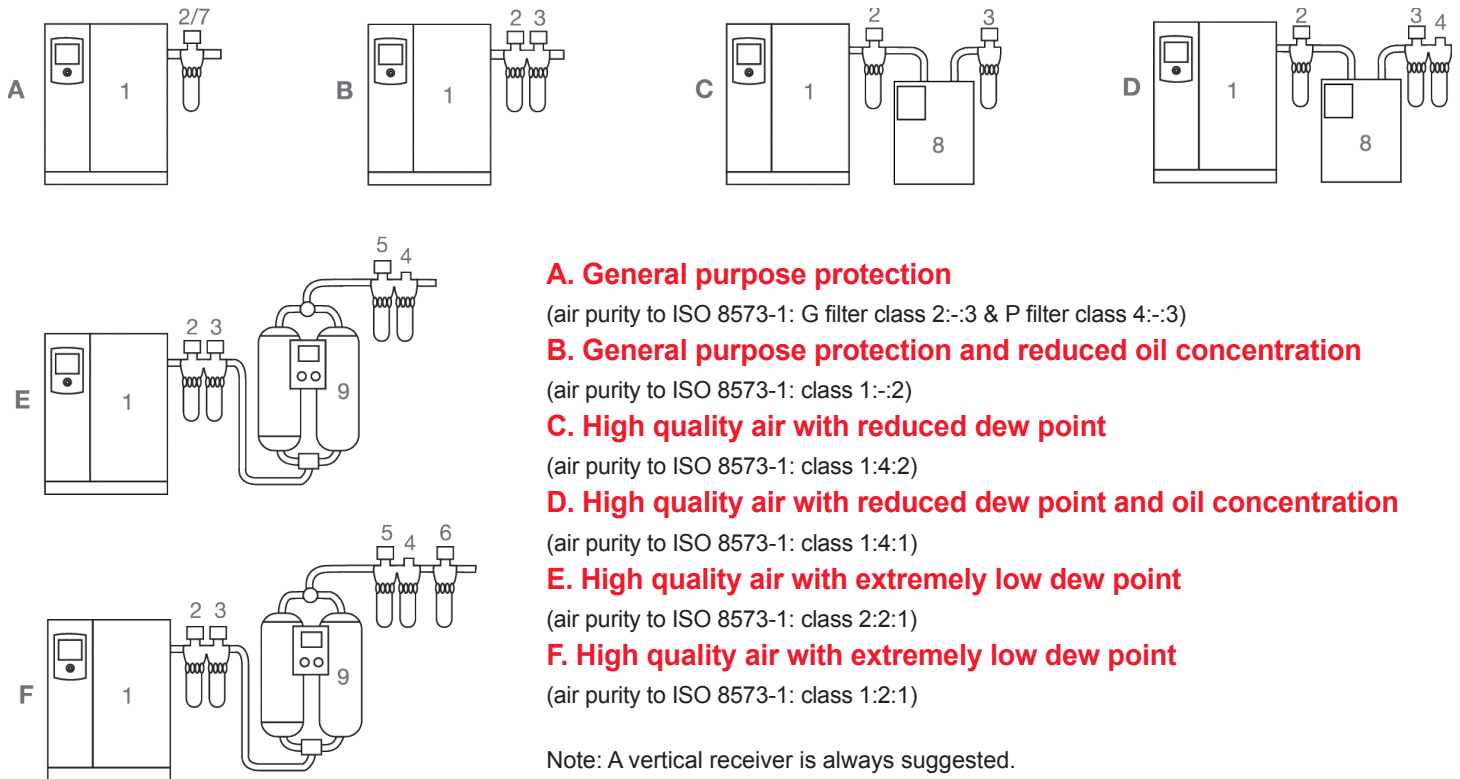


### P FILTER RANGE

Coalescing and particulate general purpose prefilter. Removes solid particles, dust, liquid and oil aerosol.  
Total Mass Efficiency: 90 %

## Typical Installations

1. Compressor with after-cooler
2. G filter
3. C filter
4. V filter
5. S filter
6. D filter
7. P Filter
8. Refrigerant dryer
9. Adsorption dryer



## A solution for every air quality

The quality of air required throughout a typical compressed air system varies. Offering an extensive filter range, can always match your precise requirements, ensuring that all types of contamination are avoided and costs are reduced to an absolute minimum.

FILTER GRADE						
	S	D	G	C	P	V
Filter Type	Solid Particles	Solid Particles	Oil aerosol & solid particles	Oil aerosol & solid particles	Oil aerosol & solid particles	Oil vapor
Test method	ISO 12500-3	ISO 12500-3	ISO 12500-1 ISO 8573-2	ISO 12500-1 ISO 8573-2	ISO 12500-1 ISO 12500-3 ISO 8573-2	ISO 8573-5
Inlet Oil Concentration (mg/m <sup>3</sup> )	NA	NA	10	10	10	0.01
Count efficiency (% at MPPS)	(MPPS=0.1 µm) 99.81	(MPPS=0.06 µm) 99.97	NA	NA	(MPPS=0.1 µm) 89.45	NA
Count efficiency (% at 1 µm)	99.97	99.999	NA	NA	94.19	NA
Count efficiency (% at 0.01 µm)	99.87	99.992	NA	NA	93.63	NA
Max oil carry-over (mg/m <sup>3</sup> )	NA	NA	0.1	0.01	1	0.003
Dry pressure drop (psi)	1.74	2.03	NA	NA	1.23	2.32
Wet pressure drop (psi)	NA	NA	2.97	3.48	1.66	NA
Wet pressure drop (psi) in typical compressor installation	NA	NA	2.68	2.90	NA	NA
Element service	After 4,000 operating hours or 1 year or pressure drop > 5.08 psi	After 4,000 operating hours or 1 year or pressure drop > 5.08 psi	After 4,000 operating hours or 1 year	After 4,000 operating hours or 1 year	After 4,000 operating hours or 1 year	After 1,000 operating hours (at 68°F) or 1 year
Precede with	-	S	water separator	G	-	G & C

\* MPPS - Most Penetrating Particle Size

\*\* Inlet oil concentration - 10 mg/m<sup>3</sup>

FILTER TYPE	NOMINAL CAPACITY*			MAXIMUM PRESSURE		CONNECTIONS/ PORT THREAD	DIMENSIONS			FREE SPACE FOR CARTRIDGE REPLACEMENT	WEIGHT
							A	B	C		
	l/min	m <sup>3</sup> /h	cfm	bar	psi	npt	in	in	in	in	lbs
FILTER 25	720	43	25	16	232	3/8"	3.54	0.83	8.98	2.95	2.20
FILTER 55	1500	90	53	16	232	1/2"	3.54	0.83	8.98	2.95	2.43
FILTER 75	2100	126	74	16	232	1/2"	3.54	0.83	11.14	2.95	2.87
FILTER 105	3000	180	106	16	232	3/4"	4.33	1.08	11.93	2.95	4.19
FILTER 105	3000	180	106	16	232	1"	4.33	1.08	11.93	2.95	4.19
FILTER 170	4800	288	170	16	232	1"	4.33	1.08	13.50	2.95	4.63
FILTER 295	8400	504	297	16	232	1 1/2"	5.51	1.34	17.68	3.94	9.26
FILTER 405	11400	684	403	16	232	1 1/2"	5.51	1.34	20.94	3.94	9.92
FILTER 550	15600	936	551	16	232	1 1/2"	5.51	1.34	20.94	3.94	10.14
FILTER 765	21600	1296	763	16	232	2"	7.05	1.97	24.33	5.90	15.21
FILTER 765	21600	1296	763	16	232	2 1/2"	7.05	1.97	24.33	5.90	15.21
FILTER 1110	31500	1890	1112	16	232	3"	8.27	2.24	28.35	7.87	24.25
FILTER 1430	40500	2430	1430	16	232	3"	8.27	2.24	35.04	7.87	27.78

\* Reference condition: pressure 102 psi (7 bar). Maximum operating temperature of 151°F (66°C), and 95°F (35°C), only for V series.  
Minimum operating temperature of 1°C.





## Over 100 years of experience

Since 1901 the Chicago Pneumatic name has represented high-performance tools and equipment designed for an extensive range of applications. Today, Chicago Pneumatic has a global reach, with local customer centers around the world. Chicago Pneumatic products are tailored to the needs of the industrial, vehicle service, and construction markets. Every day we develop and manufacture new products that are meant to meet your demands not only today, but tomorrow as well.

To learn more about our extensive range of tools, hydraulic attachments, industrial and portable compressors, accessories and workshop equipment, please visit [www.cp.com](http://www.cp.com).

CP compressors are supported by a network of trained service technicians who can provide complete warranty support, spare parts and technical consultation. For more information on our products, please contact your CP territory sales manager or a local authorized CP distributor.



## Care. Trust. Efficiency.

**Care.** Care is what service is all about: professional service by knowledgeable people, using high-quality Original parts.

**Trust.** Trust is earned by delivering on our promises of reliable, uninterrupted performance and long equipment lifetime.

**Efficiency.** Equipment efficiency is ensured by regular maintenance. Efficiency of the service organization is how Original Parts and Service make the difference.

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